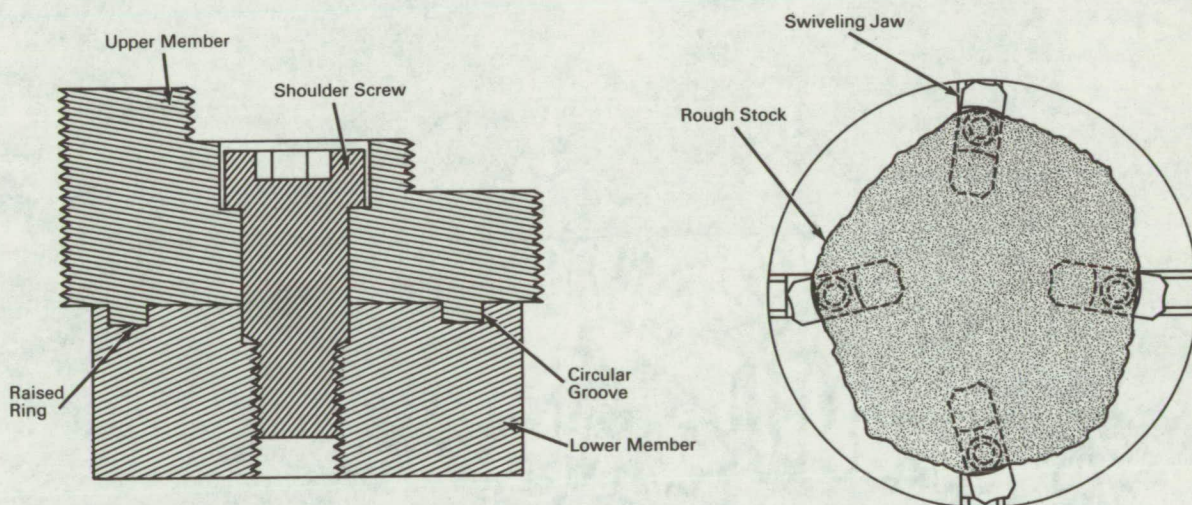


NASA TECH BRIEF



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Swiveling Lathe Jaw Concept For Holding Irregular Pieces



The problem:

To clamp irregularly shaped pieces in a lathe chuck securely and without damage or use of excessive time. Standard chuck jaws move their fixed faces in straight lines only and can cause uneven stress resulting in distortion or warpage in other than concentric forms. Additionally, much time is wasted in determining the optimum mounting position for the workpiece.

The solution:

Interchangeable swivel jaws that ride in the standard jaw slots but swivel so the jaw faces bear evenly against the workpiece surface regardless of its contour.

How it's done:

The swiveling jaw consists of a lower member that rides in the chuck slot, an upper member with three

stepped, knurled faces, and a shoulder screw connecting the two. A raised ring on the bottom face of the upper member, concentric to the shoulder screw, fits in a circular groove in the mating face of the lower member. The socket head shoulder screw is slip-fitted through a counterbored hole in the upper member so that when it is loosened, the jaw may be rotated to the proper angle to bear evenly against the workpiece.

In mounting an irregular or eccentric workpiece, the jaws are moved towards the workpiece in the conventional manner, and the upper members are then rotated to their optimum positions to bear evenly against the adjacent workpiece surfaces when the shoulder screws are tightened securely.

(continued overleaf)

Notes:

1. These jaws could be used on both engine and turret lathes whenever irregular parts are to be worked on a production basis.
2. This development is in conceptual stage only, and as of date of publication of this Tech Brief, neither a model nor a prototype has been constructed.

Patent status:

No patent action is contemplated by NASA.

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